

### **Remarks**

In the Office Action, claim 28 was objected to for an informality. Claims 1-2, 4, 11, 20-21, 25-27, 29-31, 33, 37-40, 42, 45-46, and 51-57 were rejected under 35 U.S.C. § 102(e). Further, claims 3, 5-7, 8-9, 12-17, 19, 22-23, 28, 32, 34-36, 41, 43-44, 47-50, and 58 were rejected under 35 U.S.C. § 103(a).

Claims 21-22, 35, 38, and 41 have been cancelled and claims 1, 8, 12, 16, 20, 23, 28, 31-34, 36-37, 44-45, 50-51, 54-56, and 58 have been amended. Claims 1-9, 11-17, 19-20, 23, 25-34, 36-37, 39-40, 42-58 are currently pending in the instant application.

#### **I. Objection**

Claim 28 was objected to because “the target substrate” should be “a target substrate.” Claim 28 has been amended to obviate the objection.

#### **II. § 102(e) Rejections**

Claims 1-2, 4, 11, 20-21, 25-27, 29-31, 33, 37-40, 42, 45-46, and 51-57 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,250,515 to Newbold (“Newbold”). It is respectfully submitted that the claims are not anticipated by Newbold.

##### **A. Independent Claim 1 Is Not Anticipated by Newbold**

Amended claim 1 is directed to a liquid dispensation device having a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

In contrast, Newbold discloses a liquid dispensing apparatus having a needle that is “lifted off of [a] valve seat to dispense a bead or drop of liquid.” See Newbold, col. 4, ll. 2-3. That is, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Id. at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

##### **B. Claims Depending from Claim 1 Are Patentable**

Because claims 2-9 and 11 depend directly or indirectly from claim 1 and incorporate all the limitations of claim 1, the above argument obviates the basis for this ground of rejection. Thus, claims 2-9 and 11 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**C. Independent Claim 20 Is Not Anticipated by Newbold**

Amended claim 20 is directed to a liquid dispensation device having a transfer pin “moveable between a retracted position and a dispensing position, wherein a portion of the transfer pin is in contact with a substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. *Id.* at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a transfer pin “moveable between a retracted position and a dispensing position, wherein a portion of the transfer pin is in contact with a substrate.”

**D. Claims Depending from Claim 20 Are Patentable**

Because claims 23 and 25-30 depend directly or indirectly from claim 20 and incorporate all the limitations of claim 20, the above argument obviates the basis for this ground of rejection. Thus, claims 23 and 25-30 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**E. Independent Claim 31 Is Not Anticipated by Newbold**

Amended claim 31 is directed to a dispensation device having a “first drive element oriented to magnetically urge the transfer pin into contact with a substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. *Id.* at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a “first drive element oriented to magnetically urge the transfer pin into contact with a substrate.”

**F. Claims Depending from Claim 31 Are Patentable**

Because claims 32-34 and 36 depend directly or indirectly from claim 31 and incorporate all the limitations of claim 31, the above argument obviates the basis for this ground of rejection. Thus, claims 32-34 and 36 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**G. Independent Claim 37 Is Not Anticipated by Newbold**

Amended claim 37 is directed to a method of dispensing liquid, including “moving a transfer pin from a retracted position within the chamber to an extended position, . . . whereby the transfer pin contacts a substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. *Id.* at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest “moving a transfer pin from a retracted position within the chamber to an extended position, . . . whereby the transfer pin contacts a substrate.”

**H. Claims Depending from Claim 37 Are Patentable**

Because claims 39-42 depend directly from claim 37 and incorporate all the limitations of claim 37, the above argument obviates the basis for this ground of rejection. Thus, claims 39-42 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**I. Independent Claim 43 Is Not Anticipated by Newbold**

Amended claim 43 is directed to a method of dispensing liquid, including “magnetically moving a transfer pin through the chamber and into contact with a substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. *Id.* at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest “magnetically moving a transfer pin through the chamber and into contact with a substrate.”

**J. Independent Claim 44 Is Not Anticipated by Newbold**

Amended claim 44 is directed to a liquid dispensation device having a drive element “configured to operate the contact element into contact with a substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. *Id.* at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a drive element “configured to operate the contact element into contact with a substrate.”

**K. Claims Depending from Claim 44 Are Patentable**

Because claims 45-50 depend directly from claim 44 and incorporate all the limitations of claim 44, the above argument obviates the basis for this ground of rejection. Thus, claims 45-50 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**L. Independent Claim 51 Is Not Anticipated by Newbold**

Amended claim 51 is directed to a method of dispensing liquid, including “selectively moving a transfer pin by fluid pressure toward a substrate through the chamber, . . . whereby the transfer pin contacts the substrate.”

In contrast, as discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Id. at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest “selectively moving a transfer pin by fluid pressure toward a substrate through the chamber, . . . whereby the transfer pin contacts the substrate.”

**M. Claims Depending from Claim 51 Are Patentable**

Because claims 53-58 depend directly or indirectly from claim 51 and incorporate all the limitations of claim 51, the above argument obviates the basis for this ground of rejection. Thus, claims 53-58 are not anticipated by Newbold. Reconsideration and withdrawal of the rejection is respectfully requested.

**III. § 103(a) Rejections**

Claims 3, 8-9, 12-17, 19, 22-23, 28, 32, 34-36, 41, 43-44, 47-50, and 58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Newbold in view of U.S. Patent 5,186,982 to Blette et al. (“Blette”). Further, claims 5-7 were rejected under § 103(a) as being unpatentable over Newbold in view of U.S. Patent 5,758,650 to Miller et al. (“Miller”). It is respectfully submitted that the claims are patentable.

**A. Independent Claim 1 Is Not Obvious**

Amended claim 1 is directed to a liquid dispensation device having a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

**1. Claim 1 Is Not Made Obvious by Newbold in View of Blette**

Newbold does not teach or suggest the invention of claim 1. As discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Newbold at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus in which “the forward end of the . . . pin moves to a position closely spaced from the desired location therebeneath on the circuit board so that the dot of liquid materials . . . on the forward end touches the selected location on the circuit board.” See Blette, col. 4, ll. 62-67. That is, Blette teaches an apparatus that does not contact the substrate. Blette fails to teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.” Accordingly, it is respectfully submitted that claim 1 stands in condition for allowance.

**2. Claim 1 Is Not Made Obvious by Newbold in View of Miller**

As discussed above, Newbold does not teach or suggest the invention of claim 1. No portion of the Newbold apparatus contacts a substrate. Newbold at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

Miller fails to remedy the deficiencies of Newbold. Miller is relied upon in the Office Action merely for teaching the use of a rare earth magnet. See Office Action, p. 5, ll. 7-9. Miller fails to teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.”

Thus, neither Newbold nor Miller, alone or in combination with any other prior art of record, teach or suggest a pin element having an extended position “wherein a portion of the pin element is in contact with a substrate.” Accordingly, it is respectfully submitted that claim 1 stands in condition for allowance.

**B. Claims Depending from Claim 1 Are Patentable**

Because claims 2-9 and 11 depend directly or indirectly from claim 1 and incorporate all the limitations of claim 1, the above argument obviates the basis for this ground of rejection. Thus, claims 2-9 and 11 are not made obvious by Newbold in view of Blette, nor by Newbold in view of Miller. Reconsideration and withdrawal of the rejection is respectfully requested.

**C. Independent Claim 12 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 12 is directed to a liquid dispensation device having a drive element “configured to operate the contact element into contact with a substrate.”

Newbold does not teach or suggest the invention of claim 12. Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Newbold at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a drive element “configured to operate the contact element into contact with a substrate.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus in which “the forward end of the . . . pin moves to a position closely spaced from the desired location therebeneath on the circuit board so that the dot of liquid materials . . . on the forward end touches the selected location on the circuit board.” See Blette, col. 4, ll. 62-67. That is, Blette teaches an apparatus that does not contact the substrate. Blette fails to teach or suggest a drive element “configured to operate the contact element into contact with a substrate.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a drive element “configured to operate the contact element into contact with a substrate.” Accordingly, it is respectfully submitted that claim 12 stands in condition for allowance.

**D. Claims Depending from Claim 12 Are Patentable**

Because claims 13-17 and 19 depend directly or indirectly from claim 12 and incorporate all the limitations of claim 12, the above argument obviates the basis for this ground of rejection. Thus, claims 13-17 and 19 are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

**E. Independent Claim 20 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 20 is directed to a liquid dispensation device having a drive element that “is not mechanically coupled with the transfer pin, the drive element configured to be selectively moveable by application of fluid pressure to the drive element.”

Newbold does not teach or suggest the invention of claim 20. As discussed above, Newbold discloses an apparatus that has an air actuator that moves a carrier in order to move two magnets. Id. at col. 3, ll. 63-66. The fluid pressure is not applied to the magnets. Newbold,

therefore, fails to teach or suggest a drive element “configured to be selectively moveable by application of fluid pressure to the drive element.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus that has a “cylindrical pin . . . *affixed* to a forward end of [a] piston.” See Blette, col. 2, ll. 60-61. Blette fails to disclose a drive element that “is not mechanically coupled with the transfer pin, the drive element configured to be selectively moveable by application of fluid pressure to the drive element.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a drive element that “is not mechanically coupled with the transfer pin, the drive element configured to be selectively moveable by application of fluid pressure to the drive element.” Accordingly, it is respectfully submitted that claim 20 stands in condition for allowance.

**F. Claims Depending from Claim 20 Are Patentable**

Because claims 23 and 25-30 depend directly or indirectly from claim 20 and incorporate all the limitations of claim 20, the above argument obviates the basis for this ground of rejection. Thus, claims 23 and 25-30 are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

**G. Independent Claim 31 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 31 is directed to a dispensation device having a “first drive element oriented to magnetically urge the transfer pin in a direction parallel to any movement of the first drive element.”

Newbold fails to teach or suggest the invention of claim 31. As discussed above, Newbold discloses an apparatus that moves two magnets along an axis that is transverse to the axis along which the needle moves. Newbold, therefore, fails to teach or suggest a “first drive element oriented to magnetically urge the transfer pin in a direction parallel to any movement of the first drive element.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus having a “cylindrical pin . . . *affixed* to a forward end of [a] piston.” See Blette, col. 2, ll. 60-61. The piston is connected to the pin and *physically* urges the pin. Id. at col. 3, ll. 15-18. Blette fails to teach or suggest a “first drive element oriented to magnetically urge the transfer pin in a direction parallel to any movement of the first drive element.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a “first drive element oriented to magnetically urge the transfer pin in a direction parallel to any movement of the first drive element.” Accordingly, it is respectfully submitted that claim 31 stands in condition for allowance.

**H. Claims Depending from Claim 31 Are Patentable**

Because claims 32-34 and 36 depend directly or indirectly from claim 31 and incorporate all the limitations of claim 31, the above argument obviates the basis for this ground of rejection. Thus, claims 32-34 and 36 are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

**I. Independent Claim 37 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 37 is directed to a method of dispensing liquid, including “moving a drive element and thereby moving a transfer pin along a parallel axis with the drive element . . . wherein the transfer pin is not mechanically coupled to the drive element.”

Newbold fails to teach or suggest the invention of claim 37. As discussed above, Newbold discloses an apparatus that moves two magnets along an axis that is transverse to the axis along which the needle moves. Newbold; therefore, fails to teach or suggest “moving a drive element and thereby moving a transfer pin along a parallel axis with the drive element.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus having a “cylindrical pin . . . *affixed* to a forward end of [a] piston.” See Blette, col. 2, ll. 60-61. The piston is connected to the pin and *physically* urges the pin. Id. at col. 3, ll. 15-18. Blette fails to teach or suggest “moving a drive element and thereby moving a transfer pin along a parallel axis with the drive element . . . wherein the transfer pin is not mechanically coupled to the drive element.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a “moving a drive element and thereby moving a transfer pin along a parallel axis with the drive element . . . wherein the transfer pin is not mechanically coupled to the drive element.” Accordingly, it is respectfully submitted that claim 37 stands in condition for allowance.

**J. Claims Depending from Claim 37 Are Patentable**

Because claims 39-42 depend directly from claim 37 and incorporate all the limitations of claim 37, the above argument obviates the basis for this ground of rejection. Thus, claims 39-42



are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

**K. Independent Claim 43 Is Not Made Obvious by Newbold in view of Blette**

Amended claim 43 is directed to a method of dispensing liquid, including “magnetically moving a transfer pin through the chamber and into contact with a substrate.”

Newbold does not teach or suggest the invention of claim 43. As discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Newbold at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest “magnetically moving a transfer pin through the chamber and into contact with a substrate.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus in which “the forward end of the . . . pin moves to a position closely spaced from the desired location therebeneath on the circuit board so that the dot of liquid materials . . . on the forward end touches the selected location on the circuit board.” See Blette, col. 4, ll. 62-67. That is, Blette teaches an apparatus that does not contact the substrate. Blette fails to teach or suggest “magnetically moving a transfer pin through the chamber and into contact with a substrate.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest “magnetically moving a transfer pin through the chamber and into contact with a substrate.” Accordingly, it is respectfully submitted that claim 43 stands in condition for allowance.

**L. Independent Claim 44 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 44 is directed to a liquid dispensation device having a drive element “configured to operate the contact element into contact with a substrate.”

Newbold does not teach or suggest the invention of claim 44. As discussed above, Newbold discloses an apparatus that dispenses liquid by removing a needle from an opening and dispensing liquid with the assistance of pressure. No portion of the Newbold apparatus contacts a substrate. Newbold at col. 4, ll. 54-58. Newbold, therefore, fails to teach or suggest a drive element “configured to operate the contact element into contact with a substrate.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus in which “the forward end of the . . . pin moves to a position closely spaced from the desired location therebeneath on the circuit board so that the dot of liquid materials . . . on the forward

end touches the selected location on the circuit board.” See Blette, col. 4, ll. 62-67. That is, Blette teaches an apparatus that does not contact the substrate. Blette fails to teach or suggest a drive element “configured to operate the contact element into contact with a substrate.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest a drive element “configured to operate the contact element into contact with a substrate.” Accordingly, it is respectfully submitted that claim 44 stands in condition for allowance.

**M. Claims Depending from Claim 44 Are Patentable**

Because claims 45-50 depend directly from claim 44 and incorporate all the limitations of claim 44, the above argument obviates the basis for this ground of rejection. Thus, claims 45-50 are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

**N. Independent Claim 51 Is Not Made Obvious by Newbold in View of Blette**

Amended claim 51 is directed to a method of dispensing liquid, including “selectively applying fluid pressure to a first drive element . . . wherein the transfer pin is not mechanically coupled to the first drive element.”

Newbold fails to teach or suggest the invention of claim 51. As discussed above, Newbold discloses an apparatus that has an air actuator that moves a carrier in order to move two magnets. Id. at col. 3, ll. 63-66. The fluid pressure is not applied to the magnets. Newbold, therefore, fails to teach or suggest “selectively applying fluid pressure to a first drive element.”

Blette fails to remedy the deficiencies of Newbold. Blette discloses an apparatus that has a “cylindrical pin . . . *affixed* to a forward end of [a] piston.” See Blette, col. 2, ll. 60-61. Blette fails to teach or suggest “selectively applying fluid pressure to a first drive element . . . wherein the transfer pin is not mechanically coupled to the first drive element.”

Thus, neither Newbold nor Blette, alone or in combination with any other prior art of record, teach or suggest “selectively applying fluid pressure to a first drive element . . . wherein the transfer pin is not mechanically coupled to the first drive element.” Accordingly, it is respectfully submitted that claim 51 stands in condition for allowance.

**O. Claims Depending from Claim 51 Are Patentable**

Because claims 53-58 depend directly or indirectly from claim 51 and incorporate all the limitations of claim 51, the above argument obviates the basis for this ground of rejection. Thus,

claims 53-58 are not made obvious by Newbold in view of Blette. Reconsideration and withdrawal of the rejection is respectfully requested.

### Conclusion

Applicant has obviated by amendment the objection to claim 28. Further, Applicant has obviated by amendment and argument the anticipation rejections of claims 1-2, 4, 11, 20-21, 25-27, 29-31, 33, 37-40, 42, 45-46, and 51-57. In addition, Applicant has obviated by amendment and argument the obviousness rejections of claims 3, 5-7, 8-9, 12-17, 19, 22-23, 28, 32, 34-36, 41, 43-44, 47-50, and 58.

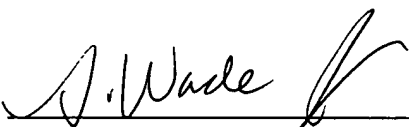
Claims 21-22, 35, 38, and 52 have been cancelled and claims 1, 8, 12, 16, 20, 23, 28, 31-33, 36-37, 40, 44-45, 50-51, 53-56, and 58 have been amended. Consequently, claims 1-9, 11-17, 19-20, 23, 25-34, 36-37, 39-51, and 53-58 are allowable. Reconsideration and a Notice of Allowance for all pending claims is respectfully requested.

This response is being submitted on or before May 27, 2004, with a Petition for One Month Extension of Time, and the required fees, making this a timely response. It is believed that no additional fees are due in connection with this filing. However, the Commission is authorized to charge any additional fees, including extension fees or other relief which may be required, or credit any overpayment, to Deposit Account No. 04-1420.

Respectfully submitted,

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